

Description

The 7135 is a constant current regulator for driving LEDs with low quiescent current and low dropout voltage. The current ranges from 100mA to 400mA with 10mA step.

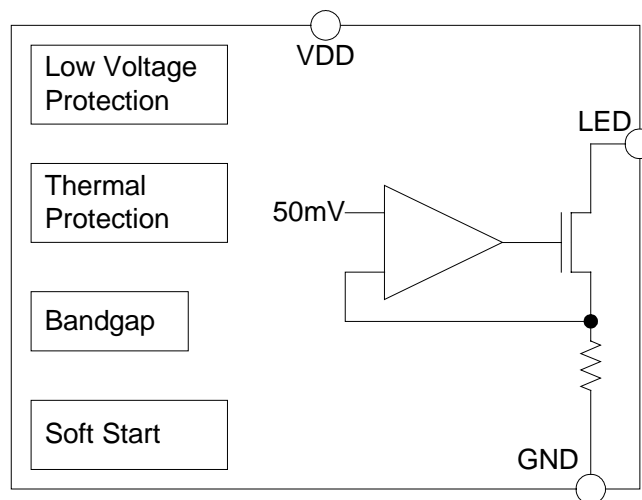
No external component is required to achieve a constant current LED driver.

Soft start, thermal protection and low voltage protection are also provided.

Applications

- Power Led driver

Block Diagram

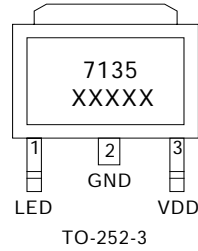
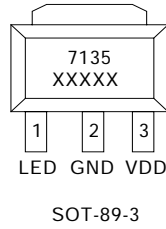


Features

- Sink current: 100mA to 400mA with 10mA step
- Power supply voltage: 2.7-6V
- Low drop out voltage: 100mV@350mA
- Low quiescent current: 100uA
- Thermal protection
- Soft start
- Low voltage protection: 2.5V
- SOT-89-3 and TO-252-3 packages

Pin Configuration

(Top View)



Absolute Maximum Ratings

Type	Symbol	Description	Value	Unit
Voltage	V_{MAX}	Maximum voltage on VDD and LED pins	8	V
	$V_{MIN-MAX}$	Voltage range on LED pin	-0.3~VDD+0.3	V
Current	$I_{LED_{MAX}}$	Maximum current on LED pin	500	mA
Power dissipation	$P_{SOT-89-3}$	Maximum Power dissipation for SOT-89-3 package	0.5	W
	$P_{TO-252-3}$	Maximum Power dissipation for TO-252-3 package	0.8	W
Thermal	$T_{MIN-MAX}$	Operation temperature range	-20~85	
	Tstorage	Storage temperature range	-40~165	
ESD	V_{ESD}	ESD voltage for human body model	2000	V

Electrical Characteristics

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Sink current range		VDD=3.6V	100		400	mA
VDD range		ILED=350mA	2.7		5.5	V
Sink current accuracy	ILED/ILED		-5		5	%
Load regulation		VLED=0.2V to 3V VDD=3.6V			2	mA/V
Line regulation		VDD=3V to 5.5V			2	mA/V
Output dropout voltage	V_{DO}			100		mV
Supply current	I_{DD}			100		μ A
Low voltage protection			2.3	2.5	2.7	V

Typical Application Circuit

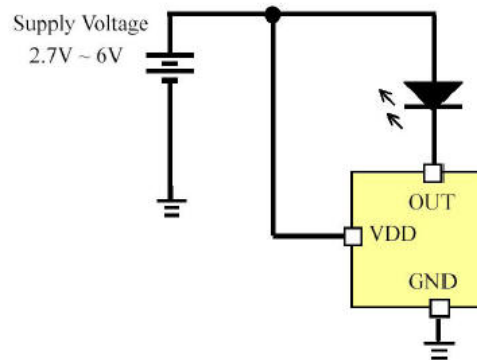


Figure1. 7135 for Low voltage application (Drive 1W LED)

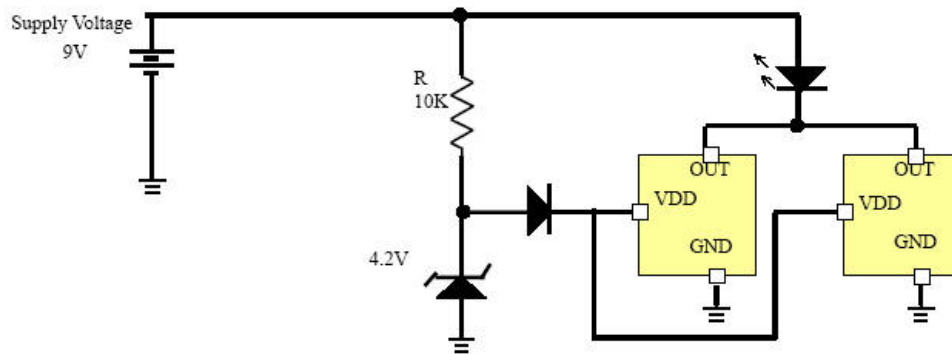


Figure1. 7135 for 3W LED application

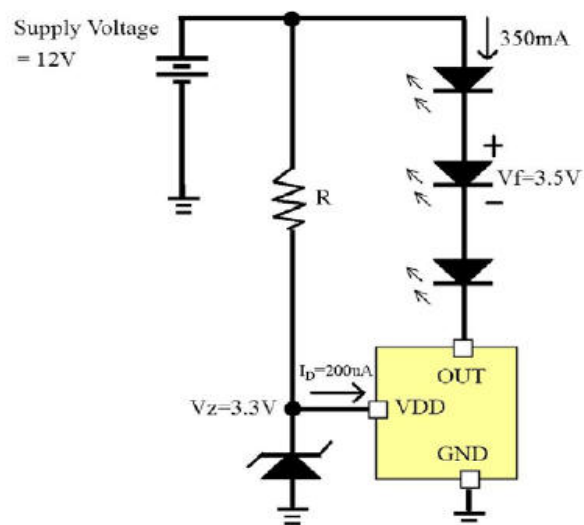
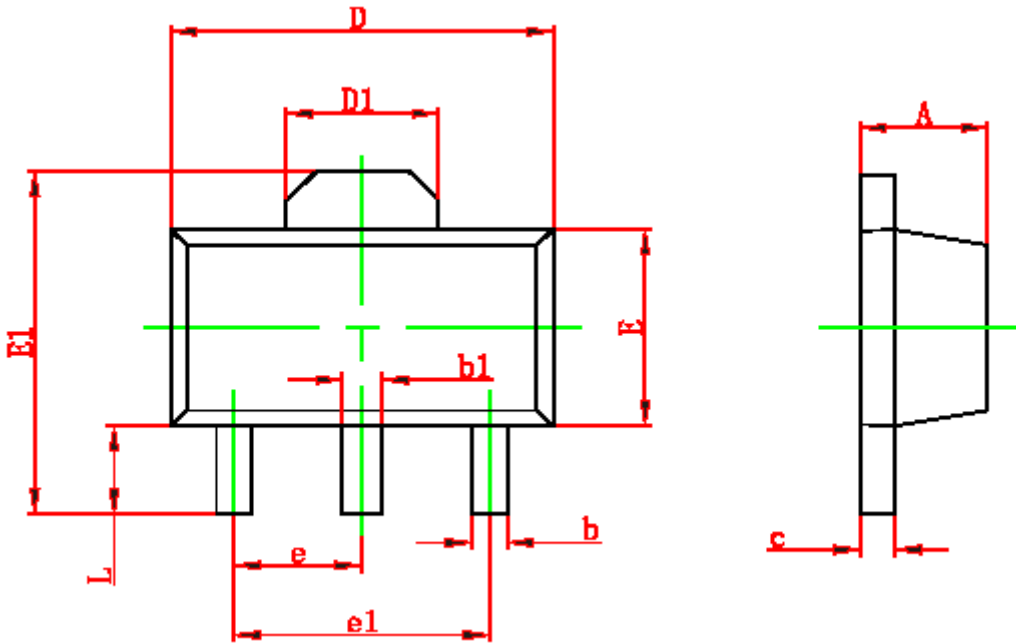


Figure1. 7135 for High voltage application

Package

1. SOT-89-3 package outline dimensions



Symbol	Dimensions In millimeter		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L	0.900	1.200	0.035	0.047

